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IDENTIFIERS	*Prefixes; *Root Words; Suffixes

ABSTRACT

This module on medical terminology (using common prefixes, suffixes, and root words) is one of 17 modules designed for individualized instruction in health occupations education programs at both the secondary and postsecondary levels. This module consists of an introduction to the module topic, a list of resources needed, and three learning experiences. Each learning experience contains an overview, an objective (e.g., after completing the required reading, use some common medical terms and identify these terms with their proper meaning), and two activities (e.g., study the list of medical terms and their meanings; practice writing the medical term and its meaning). Information sheets (such as word lists and puzzles) are generally provided for each activity. To provide feedback to students, a self-check with model answers is given for the first two learning experiences; a student performance assessment form for use by the instructor follows the third learning experience and completes the module. (KC)

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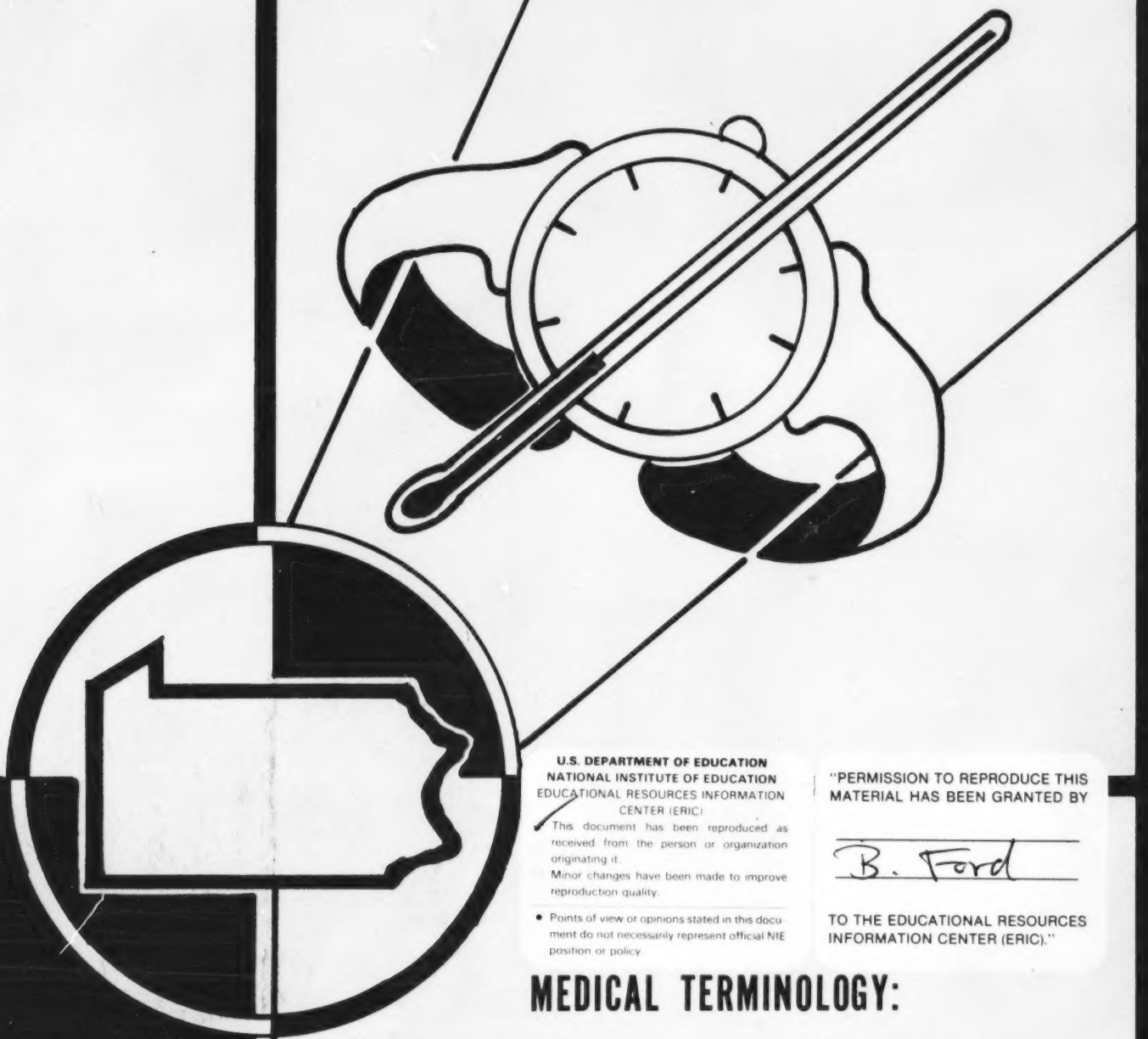
HEALTH OCCUPATIONS EDUCATION MODULE



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MEDICAL TERMINOLOGY:

USING SOME COMMON PREFIXES, SUFFIXES AND ROOTS

2

HEALTH OCCUPATIONS MODULE

designed for the purpose
of individualizing instruction
in the health related occupations
program.

Prepared by...

Temple University of the Commonwealth System of Higher Education

Philadelphia, Pennsylvania

DEPARTMENT OF VOCATIONAL EDUCATION

Prof. Dr. Amos C. Rivell, Chairman

In conjunction with...

The Pennsylvania Department of Education

BUREAU OF VOCATIONAL EDUCATION

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Acknowledgement...

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Prerequisites: To complete this module, you will need competency in identifying common prefixes, suffixes and roots, with their proper meaning. These competencies may be acquired by using the following sequence of modules:

1. Medical Terminology: Prefixes
2. Medical Terminology: Suffixes
3. Medical Terminology: Root Words

If you wish to use these modules to acquire the prerequisite competencies you need to complete all learning experiences in which you are not already competent. However, you need not complete the final experiences.

If you have acquired the prerequisite competencies in some manner other than by completing the above modules, check with your teacher to see if you need to complete the prerequisite module.

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OBJECTIVES

This module includes three (3) objectives:

Terminal Objective:

1. In an actual school situation, use the proper medical terminology related to each unit studied. Your performance will be assessed by your instructor, using the "Student Performance Assessment Form."

Enabling Objectives:

2. Given the word (medical term), identify the meaning by breaking the word down into its component parts -- i.e., prefixes, suffixes and roots -- in order to get the meaning.

3. After completing the required reading, use some common medical terms. Identify these terms with their proper meaning.

RESOURCES

Listed below are the outside resources which supplement those contained within the module. Check with your instructor to determine the availability and location of the resources.

Learning Experience I:
(optional)

Fisher, J. Patrick. Basic Medical Terminology. Indianapolis, Indiana, The Bobbs-Merrill Publishing Company, 1975. Includes cassette tapes.

Learning Experience II:
(optional)

(same as above)

Learning Experience III:
(required)

1. An actual school situation, in which you use the proper terminology related to each unit studied.

2. An instructor to assess your competency in establishing criteria for student performance in the use of this module.

LEARNING EXPERIENCE I

OVERVIEW

ENABLING OBJECTIVE

Given the word (medical term), identify the meaning by breaking the word down into its component parts, that is, prefixes, suffixes and roots, in order to derive the meaning.

ACTIVITY 1

Study the list of words (medical terms) and their meaning.

ACTIVITY 2

With the "Seek and Fine" Puzzle, see how many of the 13 hidden medical terms you can find.

FEEDBACK

Evaluate your competency by comparing your completed "Self-Check" with the "Model Answers." The "Self-Check" in this situation will be the matching test. Given a list of various medical terms and meanings, match the proper medical term with the correct meaning.

(Activity 1)

A study of medical vocabulary will show that it is made up largely of many variations and combinations of prefixes, suffixes and root words.

The root is like the root of a tree, the anchor to which the other part(s) are attached. Often the root refers to an organ of the body.

Example:

Prefix	Root	Suffix
hyper-	therm-	ia

hyper- = increased or above normal

therm- = heat

ia = condition or state of being

hyperthermia = fever, a condition of increased heat in the body.

1. The foundation of the word is the root.

2. The part of a word that comes before the root and changes the meaning of the root word is the prefix. It often describes position, actions and amounts related to the root word, e.g., hyperglycemia = excessive blood sugar).

3. A word-ending, used to change the meaning of the root word is a suffix. The suffix generally describes a condition, a procedure, a symptom or an action related to the root word, e.g., -ia in hyperglycemia refers to "condition or state," in this instance of the blood sugar.

COMMON MEDICAL TERMS

using some common prefixes, suffixes and roots.

ADENOMA - tumor made up of glandular tissue.

ADENECTOMY - surgical removal of a gland.

ANTIBIOTIC - against detrimental organisms.

APPENDECTOMY - surgical removal of the appendix.

ARTERIAL - pertaining to the artery.

ARTERITIS - inflammation of the artery.

ARTERIOSCLEROSIS - hardening of the artery.

ARTHRITIS - inflammation of a joint.

BACTERIOLOGY - the study of bacteria.

BIOLOGY - the study of living things.

CARDIOGRAM - something recorded, a tracing of the heart's electrical signal.

CARDIOGRAPH - an instrument for recording the action of the heart.

CARDIOLOGY - the study or science of the heart.

CARDIOVASCULAR - relating to the heart and blood vessels.

CARCINOMA - a cancerous tumor.

CEREBROSPINAL - pertaining to the brain and spinal chord.

CYTOLOGY - the scientific study of cells.

DERMATITIS - inflammation of the skin.

ERYTHROCYTE - red blood cell.

GASTRECTOMY - partial or total removal of the stomach.

GLYCOPENIA - abnormally low sugar.

GYNECOLOGY - science or study of the female.

HEMATOLOGY - science or study of the blood.

HEMATURIA - blood in the urine.

HEPATITIS - inflammation of the liver.

HETEROGENEOUS - derived from various sources, or varied origin.

HISTOLOGY - science or study of tissues.

HOMOGENEOUS - having the same origin or same characteristics of all parts.

HYPERGLYCEMIA - excess sugar in the blood.

HYPERTHYROIDISM - excessive function or activity of the thyroid gland.

HYPOGLYCEMIA - deficiency of sugar in the blood.

HYPOTHYROIDISM - deficiency of activity of the thyroid hormone.

INTERCELLULAR - between the cells.

INTRACELLULAR - inside or within the cell.

LEUKOCYTE - white blood cell.

LEUKOCYTOSIS - an increase in the number of white blood cells.

LYMPHOCYTOSIS - an increase or excess of lymphocytes in the blood.

MACROCYTE - a red blood cell that is larger than normal.

METASTASIS - the spread of a malignant growth to other parts of the body.

MICROCYTE - a blood cell that is smaller than normal.

NEPHRITIS - inflammation of the kidneys.

NEURITIS - inflammation of a nerve.

PATHOLOGY - science or study of disease.

PERICARDIUM - membrane surrounding the heart.

PHARMACOLOGY - study of drugs and their action in the body.

POLYCYTHEMIA - increase or excess of red blood cells.

PHLEBITIS - inflammation of a vein.

POLYURIA - increase in urine production and elimination.

RADIOLOGY - science or study of X-rays.

RHINITIS - inflammation of the membrane in the nose.

RHINOMYCOSIS - fungus infection of the nose.

SUBCUTANEOUS - below the skin.

THROMBOPHLEBITIS - inflammation of a vein, accompanied by formation of a blood clot.

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(Activity 2)

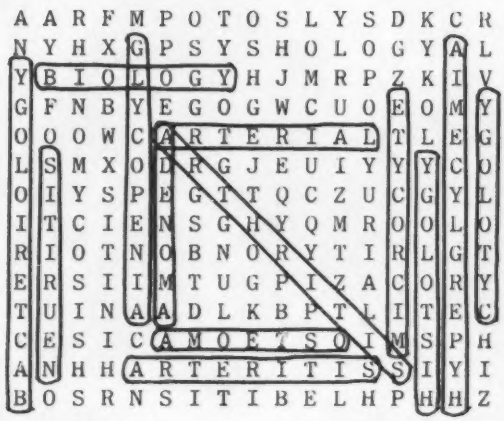
"SEEK AND FIND"

Thirteen (13) medical terms appear forward, backward, up, down and diagonally in the block of letters. Find each one and box it in. Some medical terms may overlap others.

ADENOMA
ARTERIAL
ARTERITIS
ARTHRITIS
BACTERIOLOGY
BIOLOGY
CYTOLOGY
GLYCOPENIA
HISTOLOGY
HYPERGLYCEMIA
MICROCYTE
NEURITIS
OSTEOMA

A A R F M P O T O S L Y S D K C R
N Y H X G P S Y S H O L O G Y A L
Y B I O L O G Y H J M R P Z K I V
G F N B Y E G O G W C U O E O M Y
O O O W C A R T E R I A L T L E G
L S M X O D R G J E U I Y Y Y C O
O I Y S P E G T T Q C Z U C G Y L
I T C I E N S G H Y Q M R O O L O
R I O T N O B N O R Y T I R L G T
E R S I I M T U G P I Z A C O R Y
T U I N A A D L K B P T L I T E C
C E S I C A M O E T S O I M S P H
A N H H A R T E R I T I S S I Y I
B O S R N S I T I B E L H P H H Z

FEEDBACK: MODEL ANSWERS


A A R F M P O T O S L Y S D K C R
N Y H X G P S Y S H O L O G Y A L
Y B I O L O G Y H J M R P Z K I V
G F N B Y E G O G W C U O E O M Y
O O O W C A R T E R I A L T L E G
L S M X O D R G J E U I Y Y Y C O
O I Y S P E G T T Q C Z U C G Y L
I T C I E N S G H Y Q M R O O L O
R I O T N O B N O R Y T I R L G T
E R S I I M T U G P I Z A C O R Y
T U I N A A D L K B P T L I T E C
C E S I C A M O E T S O I M S P H
A N H H A R T E R I T I S S I Y I
B O S R N S I T I B E L H P H H Z

SELF-CHECK: MATCHING TEST

Given a list of various medical terms and meanings, match the proper medical term with the correct meaning.

Write the letter of the correct meaning before the number of the medical term to be defined.

MEDICAL TERM	MEANING
_____ 1. subcutaneous	A. inflammation of a joint.
_____ 2. arterial	B. red blood cell.
_____ 3. hyperglycemia	C. study of the heart.
_____ 4. polycythemia	D. an instrument for recording action of the heart.
_____ 5. cardiogram	E. surgical removal of the appendix.
_____ 6. hepatitis	F. partial or total removal of the stomach.
_____ 7. arthritis	G. below the skin.
_____ 8. microcyte	H. deficiency of sugar in the blood.
_____ 9. intracellular	I. science or study of X-rays.
_____ 10. hypoglycemia	J. between the cells.
_____ 11. cardiology	K. pertaining to the artery.
_____ 12. gastrectomy	L. inflammation of the liver.
_____ 13. appendectomy	M. a recorded tracing of the heart's action.
_____ 14. cardiograph	N. a blood cell that is smaller than normal.
_____ 15. erythrocyte	O. increase or excess of red blood cells.
	P. excess sugar in the blood.
	Q. inside or within the cell.

FEEDBACK: MODEL ANSWERS

G 1.

K 2.

P 3.

O 4.

M 5.

L 6.

A 7.

N 8.

Q 9.

H 10.

C 11.

F 12.

E 13.

D 14.

B 15.

LEARNING EXPERIENCE II

OVERVIEW

ENABLING OBJECTIVE

After completing the required reading, use some common medical terms. Identify these terms with their proper meaning.

ACTIVITY 1

Review the list of common medical terms.

ACTIVITY 2

Practice writing the medical term and its meaning.

FEEDBACK

Evaluate your competency by comparing your completed "Self-Check" with the "Model Answers."

(Activity 1)

Review the list of "COMMON MEDICAL TERMS." (pages 5-6)

(Activity 2)

Practice writing the medical term, prefix-meaning, root-meaning and suffix-meaning. Pronounce the medical term aloud.

MEDICAL TERM	PREFIX-MEANING	ROOT-MEANING	SUFFIX-MEANING
1. CARDIOLOGY	.....	cardi=heart	ology=study of, science of
2. CARDIOGRAM	.....	cardi=heart	gram=something recorded; a picture, tracing
3. CARDIOGRAPH	.....	cardi=heart	graph=an instrument for recording
4. PHLEBITIS	.....	phleb=vein	itis=inflammation
5. ARTERITIS	.....	art=artery	itis=inflammation
6. HEMATOLOGY	.....	hemat=blood	ology=study of, science of
7. GASTRECTOMY	.....	gastr=stomach	ectomy=removal, excision
8. THROMBOPHLEBITIS	....	thrombo=clot; phleb=vein	itis=inflammation
9. SUBCUTANEOUS	sub=below	cutan=skin	eous=having the nature of, like
10. POLYURIA	poly=many, excessive	uria=urine, urination	.....

PRACTICE SHEET

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MEDICAL TERM	PREFIX-MEANING	ROOT-MEANING	SUFFIX-MEANING
11. HYPERGLYCEMIA	hyper=above, excess	glyc=sugar; emia=blood	.....
12. LEUKOCYTE	.....	leuk(o)=white; cyte=cell	.....
13. ANEMIA	an=without, lack of	emia=blood	.....
14. PATHOLOGY	.....	path=disease	ology=study of
15. INTERCELLULAR	inter=between	cellular=cell	.....
16. INTRACELLULAR	intra=within, inside	cellular=cell	.....
17. MACROCYTE	macro=large	cyte=cell	.....
18. HYPOGLYCEMIA	hypo=below, deficiency	glyc=sugar emia=blood	.....
19. RADIOLOGY	.....	radio=ray, X-ray	ology=study of
20. RHINITIS	.....	rhin=nose	itis=inflammation

PRACTICE SHEET

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FEEDBACK: SELF-CHECK

Fill in the blanks.

MEDICAL TERM	PREFIX-MEANING	ROOT-MEANING	SUFFIX-MEANING
1. HEMATOLOGY		_____	_____
2. ANEMIA	_____	_____	
3. GASTRECTOMY		_____	_____
4. POLYURIA	_____	_____	
5. PATHOLOGY		_____	_____
6. MACROCYTE	_____	_____	
7. THROMBOPHLEBITIS		_____	_____
8. CARDIOGRAM		_____	_____
9. CARDIOGRAPH		_____	_____
10. CARDIOLOGY		_____	_____

FEEDBACK: MODEL ANSWERS

MEDICAL TERM	PREFIX-MEANING	ROOT-MEANING	SUFFIX-MEANING
1. HEMATOLOGY		hemat=blood	ology=study of
2. ANEMIA	an=without, lack of	emia=blood	
3. GASTRECTOMY		gastr=stomach	ectomy=removal, excision
4. POLYURIA	poly=many	uria=urine, urination	
5. PATHOLOGY		path=disease	ology=science, study of
6. MACROCYTE	macro=large	cyte=cell	
7. THROMBOPHLEBITIS		thrombo=clot; phleb=vein	itis=inflammation
8. CARDIOGRAM		cardio=heart	gram=something recorded, a picture, tracing
9. CARDIOGRAPH		cardio=heart	graph=instrument for recording
10. CARDIOLOGY		cardi=heart	ology=science, study of

LEARNING EXPERIENCE III

OVERVIEW

TERMINAL OBJECTIVE

In an actual school situation, use the proper medical terminology related to each unit studied. Your performance will be assessed by your instructor, using the "Student Performance Assessment Form."

ACTIVITY 1

Practice and review the writing of medical terms, spelling them, giving their meaning and pronouncing them.

ACTIVITY 2

Write a medical term. If possible, change the prefix in order to give the word a different meaning. Likewise, then change the suffix in order to give the word still another meaning.

(Activity 1)

Review the list of "COMMON MEDICAL TERMS." (pages 5-6)

Practice the writing of medical terms, spelling them, giving their meaning and pronouncing them.

PRACTICE SHEET

(Activity 2)

Write a medical term. If possible, change the prefix in order to give the word a different meaning. Likewise, then change the suffix in order to give the word still another meaning.

FEEDBACK

After you have mastered the material in Activities 1 and 2 of this Learning Experience, raise your hand in order to notify your instructor that you are ready to demonstrate your skills.

The instructor will check each step on the "Student Performance Assessment Form."

Based upon the criteria specified in this assessment instrument, your instructor will determine whether you are competent in the proper use of medical terms.

STUDENT PERFORMANCE ASSESSMENT FORM

.....

MEDICAL TERMS

	SATISFACTORY	UNSATISFACTORY
1. Pronounced the medical term correctly at least 7 out of 10 times.		
2. Spelled the medical term accurately at least 80% of the time.		
3. Defined the meaning of the medical term accurately at least 80% of the time.		
4. Changed the meaning of the medical term by changing the prefix at least twice, and changed the suffix at least twice.		

Instructor's Signature: _____

Instructor's Comments:

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